UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4WD-RCRA

APR 11 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Anne Robinson
General Manager
PCS Phosphate Swift Creek Complex
P.O. Box 300
White Springs, Florida 32096

SUBJ: RCRA Case Development Investigation/Evaluation
PCS Swift Creek Complex
EPA ID Number: FLD 000 622 548

Dear Ms. Robinson:

On April 13, 2005, representatives of the U.S. Environmental Protection Agency (EPA) conducted a Resource Conservation and Recovery Act (RCRA) Case Development Inspection/Evaluation (CDIE) at the PCS Swift Creek Complex located in White Springs, Florida. This was an EPA lead inspection for evaluating the facility's compliance with the applicable RCRA regulations.

Enclosed is the EPA RCRA CDIE Report which indicates that no violations of RCRA were discovered. A copy of this report has also been forwarded to FDEP.

If you have any questions regarding this matter, please contact Bethany Russell, of my staff, by phone at (404) 562-8542 or by e-mail at russell.bethany@epa.gov

Sincerely,

Jeffrey T. Pallas, Chief
South Enforcement and Compliance Section
RCRA Enforcement and Compliance Branch

Enclosure

cc: Pam Fellabaum- FDEP w/ enclosure

RCRA Case Development Evaluation/ Inspection Report

1) Inspector and Author of Report

Bethany Russell, Environmental Scientist

2) Facility Information

Potash Corporation of Saskatchewan, Inc. (PCS Phosphate or PCS)
Swift Creek Complex
US Highway 41 N
White Springs, Florida 32096

Mailing Address:
P.O. Box 300
White Springs, Florida 32096
Phone: (386) 397-8734

EPA ID No.: FLD 000 622 548

3) Responsible Official(s)

Anne Robinson PCS, General Manager

4) Date(s) and Time(s) of Inspection

April 13, 2005, 3:30 p.m.

5) Inspection Participants

Anne Robinson	PCS
Charles Pults	PCS, Senior Environmental Engineer
Jeff Pallas	U.S. Environmental Protection Agency, Region 4 (EPA)
Bethany Russell	EPA
Art Masters	EPA

6) Applicable Regulations

40 Code of Federal Regulations (CFR) Parts 260-279,
Resource Conservation and Recovery Act (RCRA) Sections 3002, 3004, 3005 and 3007, (42 U.S.C. §§ 6922, 6924, 6925, and 6937),
Florida Statute Part IV Resource Recovery and Management, Chapter 403, Part IV, Sections 403.701 and 403.091, Florida Statutes, and the regulations promulgated and adopted by reference and set forth at the Florida Administrative Code (F.A.C.) Annotated Chapter 62-710 and 62-730.

7) Purpose of Inspection

This was an EPA lead Case Development Investigation/Evaluation (CDIE) to determine PCS's compliance with the applicable requirements of the State and Federal RCRA statutes and regulations.

General Overview

EPA's sampling investigation, conducted concurrently with the CDIE during the week of April 12, 2005, was performed to collect and analyze process samples and to collect and analyze samples which could evaluate potential risk posed to the environment due to waste management on-site. No samples of process wastewaters were collected at this facility. One sample of non-process water was collected in a fresh water ditch onsite. No samples were collected to determine environmental risk as wastewaters onsite appeared to be either excluded per "Bevill," or did not appear to have a pH of less than 2. Analytical data for the single sample collected is included in Attachment 1.

8) Facility Inspection History

PCS's most recent previous RCRA CEI was performed on October 29, 1997, by FDEP personnel. As a result of violations noted during that inspection, the facility was determined by FDEP to be a Significant Non-Complier (SNC). The facility signed a FDEP Short Form Consent Order on 9/8/1998 to resolve the violations. The violations noted which led to the determination that the facility was a SNC included:

1. 40 CFR § 262.11 – Failure to perform a hazardous waste determination on waste bead blast grit generated in the machine shop, the plant maintenance shop and the mobile shop.
2. 40 CFR § 262.20(a) – Failure to use the manifest system when disposing D006 waste grit blast from the mobile shop, F005 solvent-contaminated rags and paper towels generated in the paint shop and F001 solvent contaminated rags and paper towels generated in the mobile shop.
3. 40 CFR § 262.34(c)(1)(ii) - Failure to mark one 5-gallon container of D001/F005 waste paint/waste thinner, and one 5-gallon container of rags and paper towels contaminated with D001/F005 waste paint/waste thinner with the words "Hazardous Waste" or other labeling which identifies the contents of the containers.
4. 40 CFR § 265.173(a)- Failure to keep closed a one 5-gallon container of F005 waste paint/waste thinner and one 5-gallon container of rags and paper towels contaminated with D001/F005 waste paint/waste thinner.
5. 40 CFR § 279.22(c)(1)- Failure to label four 5-gallon containers and two 55-gallon drums of used oil with the words "Used Oil."
6. 40 CFR § 279.22(d)- Failure to immediately contain and cleanup a release of used oil in the locomotive service area.
7. 62-710.850(6)(a) F.A.C.- Failure to label two 30-gallon drums of used oil filters with the words "Used Oil Filters."

9) Facility Description

PCS's Swift Creek Complex shares approximately 100,000 acres of land in Hamilton County, Florida with PCS's Mining Operations and PCS's Suwannee River Complex. Currently, PCS employs approximately 950 personnel and operates continuous 24/7 shifts. They have notified as a small quantity generator of hazardous waste in the State of Florida.

10) Findings

The inspection began with an opening conference at 3:30 pm on April 13, 2005. Credentials were presented and the purposes of the inspection were stated. A closing conference was held following the inspection to discuss preliminary findings. The areas inspected, areas sampled, sampling results, and findings are as follows:

General Process Overview

PCS produces the liquid fertilizer black superphosphoric acid (SPA). Sulfuric acid and phosphoric acid are essential reactants in the aforementioned products. Sulfuric acid is produced and consumed on-site. Phosphoric acid is produced using the hemi-hydrate process. The reaction yields phosphoric acid and calcium sulfate dihydrate (phosphogypsum or gypsum). The phosphoric acid is then further refined to produce superphosphoric acid which is subsequently shipped to the Suwannee River Complex for either further use in production or as a salable commodity.

PCS operates two sulfuric acid plants and one phosphoric acid plant. A brief description of each plant/area and subsequent findings are summarized in the following pages of this report.

Sulfuric Acid Plants

A preliminary step in the production of phosphoric acid and subsequent products is the manufacture of sulfuric acid which is used to digest phosphate rock and produce the resultant phosphoric acid. Sulfuric acid is produced in two identical plants onsite, designated as the E and F trains.

Waste Management at the Sulfuric Acid Plants

Continuous effluent streams from the sulfuric acid plants include process wastewaters and stormwater run-off.

Process wastewater streams from the production of sulfuric acid include, among others, boiler blowdown from the waste heat boilers, cooling tower blowdown and demineralizer water. All process wastewater streams are discharged into a tank-system elementary neutralization unit (ENU) where lime is added to increase the pH of the water.

Wastewaters from the Sulfuric Acid Plant are not exempt from regulation under Section 3005 of RCRA if they exhibit one or more characteristics identified in 40 CFR § 261.20-

.24 (adopted by reference at F.A.C. Chapter 62-730). PCS appeared to be in compliance by utilizing an elementary neutralization system to neutralize low pH (< 2 pH units) wastewaters from the sulfuric acid process. To verify compliance, on April 13, 2005, EPA took pH readings of water in the main sulfuric acid ditch, the cooling tower blowdown, and the boiler blowdown. The pH of the water in the sulfuric acid ditch was 6.7; the pH of the cooling tower blowdown was 6.6; the pH of the boiler blowdown was 6.2. No apparent RCRA violations were noted.

Demineralizers/ Water Neutralization Plant

As mentioned above, wastewater from the sulfuric acid process is neutralized with lime. After lime is added to the wastewater, the slurry is sent to a clarifier where excess lime is settled. The residual water is sent through a demineralizer where it proceeds through an anion exchange, followed by a cation exchange, and a secondary anion exchange. Water from the deionizer then goes to a neutralization tank (water from ion exchange resin regeneration also goes to the neutralization tank) and is neutralized prior to transport to the boilers where it is converted to steam for energy. No apparent RCRA violations were noted.

Phosphoric Acid/Superphosphoric Acid Plant

PCS receives phosphate ore (calcium fluoroapatite) from their mining operations located on contiguous property. The ore is fed through a series of reactors along with recycled phosphoric acid from the process. Sulfuric acid is added in the reactor series as a leaching agent to the phosphoric acid slurry. After completing the reaction series, the process stream is washed with pond water while being forced through a filter. The filtercake is composed primarily of gypsum ($CaSO_4\ 2H_2O$). Impurities are then removed from the acid and the pure liquid is concentrated to desired concentration to produce superphosphoric acid. Gypsum generated from the process is mixed with pond water at a rate of three pounds of water per pound of solid. The mixture is slurried and pumped to the gypsum storage stack.

Waste Management at the Phosphoric/ Superphosphoric Acid Plant

The phosphoric acid/superphosphoric plant is equipped with a Venturi scrubber system which uses pond water to remove fluorine at various stage of the process. Process water from the reactors and the pan filters pass through the scrubber system. Scrubbing water from the system is transported to the Cooling Pond System.

Process wastewater streams include cooler/condenser water, evaporator cooling water, and slurry water. In addition, PCS generates some tank, equipment, and/or area clean-out or wash-down wastewater. According to facility personnel, these wastewaters are either neutralized prior to discharge to the ditch or are already neutral via the use of fresh water. Episodic waste streams generated in this area include spent catalyst and used oil. Process wastewater generated solely from the production of phosphoric acid is a solid waste pursuant to 40 CFR § 261.4, but is exempt from hazardous waste regulation pursuant to 40 CFR § 261.4(b)(7)(ii)(P). No apparent RCRA violations were noted.

Process wastewater generated from the production of superphosphoric acid is a solid waste pursuant to 40 CFR § 261.4, but is exempt from hazardous waste regulation pursuant to F.A.C. 62-730.160/40 CFR § 261.4(b)(7)(ii)(P). No apparent RCRA violations were noted.

As stated above, gypsum generated from phosphoric acid and subsequent superphosphoric acid production is slurried with process water and is pumped to the gypsum storage stack where, over time, the water decants from the gypsum and drains into an unlined earthen cooling loop and pond system surrounding the stack. Gypsum generated from the production of phosphoric acid is a solid waste pursuant to 40 CFR § 261.4, but is exempt from hazardous waste regulation pursuant to 40 CFR § 261.4(b)(7)(ii)(D).

Laboratory

PCS only has a minor support laboratory onsite. Analytical support is provided mainly by the Suwannee River Complex laboratory.

Tank Farm

PCS's phosphoric acid tank farm consists of five process storage tanks and two finished product storage tanks. As stated in the Waste Management at the Phosphoric Acid/Superphosphoric Acid Plant section above, according to facility personnel, if a tank needs to be cleaned (scale removed), product is moved to a secondary tank and the tank is pressure washed with fresh water to remove scale. The wastewater which flows to the Cooling Pond System has a pH of greater than 2. Any scale generated from the cleanout is transported to the gypstack.

Inspectors did note a few minor seal leaks from various pieces of equipment in the area (Photo 1). PCS must be diligent in repairing leaking equipment, containing, and neutralizing leaks and spills to prevent a potential release to the environment. No apparent RCRA violations were noted.

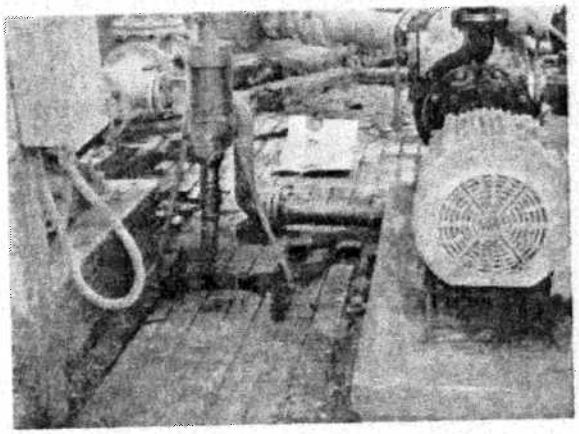

Photo 1. Pump seal leak

Gypstack and Cooling Pond System

PCS currently manages one gypsum storage stack. The stack is unlined and has a dedicated Cooling Pond System. The Cooling Pond System receives water streams from the following processes: phosphoric acid scrubbing system, pre-scrubbers in the phosphoric acid hemi-plant on process tanks (cooling vapor), barometric condensers on crystallizers, filter vacuum condensing system, and vacuum pumps.

All waters which flow into or are pumped out of the Cooling Pond System are generated and used only in the phosphoric acid area. No apparent RCRA violations were noted.

Railcar Loading/Unloading Area

PCS does not perform railcar cleanout at this facility. The area is, however, equipped with a sump to contain any spills and/or leaks from loading/unloading the railcars. According to facility personnel liquids contained in the sump, designated as the "railcar loading sump," are pumped back to the phosphoric acid storage tanks. No apparent RCRA violations were noted.

Oil/Water Separator

PCS has several oil storage tanks and pumps onsite. In order to separate rainwater from oil, they utilize an oil/water separator (Photo 2). At the time of inspection, it appeared that either the separator had failed or an oil spill had occurred which flowed across the roadway into a portion of a freshwater ditch (Photo 3). PCS had placed a boom in the ditch to prevent further migration of the oil. On April 13, 2005, EPA took a sample of the oil/water mixture. No hazardous constituents were noted above permissible levels (Attachment 1). PCS should be vigilant in rapidly responding to and cleaning up any spills of oil into the environment. No apparent RCRA violations were noted.

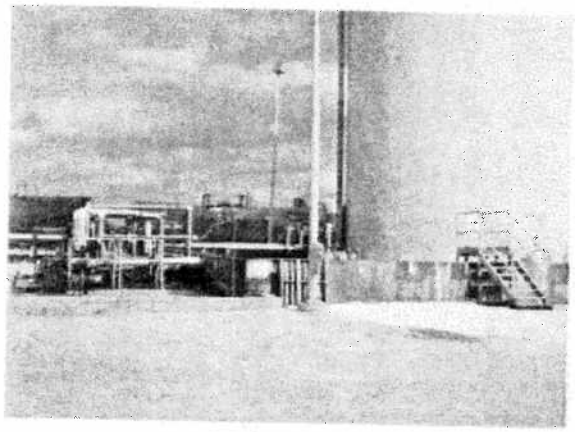

Photo 2. Oil/water separator

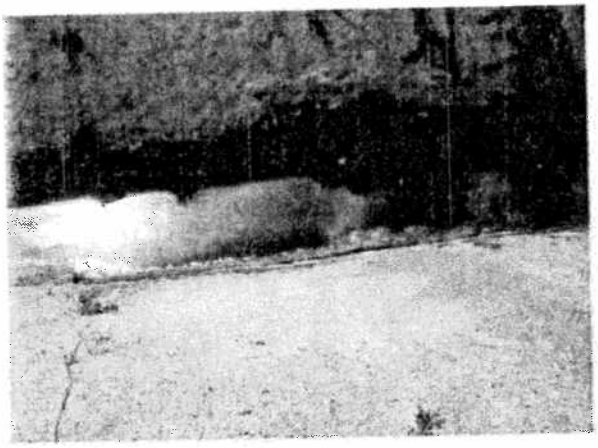

Photo 3. Oil spill in concrete ditch onsite

11) Inspection Conclusion

No apparent RCRA violations were noted at this facility. PCS should, however, be diligent in repairing leaking equipment and cleaning up any spill and/or leaks of acid to prevent a potential release to the environment. PCS should also be diligent in cleaning up releases of oil to the environment.

12) Signed:

Bethany Russell
Environmental Scientist

3/2/06
Date

13) Concurrence:

Jeffrey T. Pallas, Chief
South Enforcement and Compliance Section
RCRA Enforcement and Compliance Branch

4/5/06
Date